UNITED STATES PATENT AND TRADEMARK OFFICE

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
   Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>14 May 2007</u>.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-16 and 21-24</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-16 and 21-24</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>14 May 2007</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

        1.☐ Certified copies of the priority documents have been received.

        2.☐ Certified copies of the priority documents have been received in Application No. _____.

        3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

1.   This is responsive to the Amendment filed on 14 May 2007.

Response to Amendment

2.   The objections to claims 17 and 20 are withdrawn.

3.   The 35 USC 101 rejections of claims 17 – 20 are withdrawn.

4.   The objections to the Drawings are withdrawn.

5.   The Examiner acknowledges that during a phone interview with Applicant's

representative, it was agreed that the rejections under 35 USC 101 of claims 11 – 16

would be overcome by a proposed amendment. However, after further review and

consideration, the rejections still stand. See below.

Response to Arguments

6.   Applicant's arguments with respect to claims 1 – 16, and 21 – 24 have been

considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 101

7.   35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of
> matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the
> conditions and requirements of this title.

8.   Claims 11 – 16 are rejected under 35 U.S.C. 101 because the claimed invention

is directed to non-statutory subject matter.

Claims 11 – 16 are directed to a "computer program product".

The "computer program product" can reasonably be interpreted as computer

listings only. Computer programs claimed as computer listings per se, i.e., the

descriptions or expressions of the programs, are not physical "things." They are neither

computer components nor statutory processes, as they are not "acts" being performed.

Such claimed computer programs do not define any structural and functional

interrelationships between the computer program and other claimed elements of a

computer, which permit the computer program's functionality to be realized. In contrast,

a claimed computer-readable medium encoded with a computer program is a computer

element which defines structural and functional interrelationships between the computer

program and the rest of the computer which permit the computer program's functionality

to be realized, and is thus statutory.

Amending the claims to recite 'A recordable type medium storing a computer

program product' would overcome the rejection in accordance with Applicant's

disclosure.

Claim Rejections - 35 USC § 103

9.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10.   Claims 1 – 4, 6 – 7, 11 – 14, and 21 – 23 are rejected under 35 U.S.C. 103(a) as

being unpatentable over Arnold et al. (USPGPub 2003/0125955) in view of Poirier et al

(USPN 6,321,372).

Claim 1:

Arnold discloses a method, implemented in a data processing system, for

generating task-specific code for pattern recognition ([0008]), the method comprising:

receiving task-specific input system data of a pattern recognition system and

generating task-specific code for the pattern recognition system based on the task-

specific input system data ("the distributed speech recognition system allows automatic

"speaker adaptation" to be performed locally by the client device ... local parameters ...

are adapted locally by the client device in performing its speech recognition function",

[0008], see also [0009] and "the client device is adapting its models in response to the

speaker", [0020]).

However, even if Arnold discloses that "the speech recognizer module ... can be

represented by one or more software applications", it does not explicitly disclose the

software applications being source code.

Poirier discloses a similar method where a source code is modified, such as by

further specifying it, in a linguistic service system. Poirier also discloses the code being

compiled ("compile ... modified source code", col. 10, lines 52-56).

It would have been obvious to one with ordinary skill in the art at the time the

invention was made to use a source code (which has to be compiled in order to execute

on a computer) as the software modules in Arnold's method in order to modify an

existent source code in order to generate a more specified service (Poirier, col. 2, lines

26-36).

Claim 2:

Arnold and Poirier disclose the method of claim 1, Arnold further discloses

wherein the pattern recognition system performs speech recognition ("parameters ...

are adapted locally by the client device in performing its speech recognition functions",

[0008]).

Claim 3:

Arnold and Poirier disclose the method of claim 2, Arnold further discloses

wherein the task-specific input system data includes one of a language model, an

acoustic model, a front-end for computing feature vectors, and information related to

speaker adaptation (FIG. 1, items 120 – 124 and related text).

Claim 4:

Arnold and Poirier disclose the method of claim 3, Arnold further discloses

wherein the acoustic model includes Gaussians ([0023]).

Claim 6:

Arnold and Poirier disclose the method of claim 3, Arnold further discloses

wherein the acoustic model is represented as a Hidden Markov Model ([0023]).

Claim 7:

Arnold and Poirier disclose the method of claim 1. Poirier further discloses the

source code being compiled ("compile ... modified source code", col. 10, lines 52-56).

It would have been obvious to one with ordinary skill in the art at the time the invention was made to compile a source code in order to obtain an executable file which is able to run on a computer (Poirier, "compile ... modified source code to obtain service executable", col. 10, lines 52-56).

Claims 11 – 13 are similar in scope and content to claims 1 – 3 and are rejected with the same rationale.

Claim 14 is similar in scope and content to claim 7 and is rejected with the same rationale.

Claim 21:

Arnold discloses an apparatus for generating task-specific code for pattern recognition ([0008]), the method comprising:

a bus; a memory connected to the bus, wherein the memory contains computer readable instructions; a processor connected to the bus, wherein the processor executes the computer readable instructions (FIG. 2 and related text) to:

receive task-specific input system data of a pattern recognition system and generate task-specific code for the pattern recognition system based on the task-specific input system data ("the distributed speech recognition system allows automatic "speaker adaptation" to be performed locally by the client device ... local parameters ... are adapted locally by the client device in performing its speech recognition function", [0008], see also [0009] and "the client device is adapting its models in response to the speaker", [0020]).

However, even if Arnold discloses that "the speech recognizer module ... can be represented by one or more software applications", it does not explicitly disclose the software applications being source code.

Poirier discloses a similar method where a source code is modified, such as by further specifying it, in a linguistic service system. Poirier also discloses the code being compiled ("compile ... modified source code", col. 10, lines 52-56).

It would have been obvious to one with ordinary skill in the art at the time the invention was made to use a source code (which has to be compiled in order to execute on a computer) as the software modules in Arnold's apparatus in order to modify an existent source code in order to generate a more specified service (Poirier, col. 2, lines 26-36).

Claim 22 is similar in scope and content to claim 2 and is rejected with the same rationale.

Claim 23 is similar in scope and content to claim 23 and is rejected with the same rationale.

11.   Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Arnold et al. (USPGPub 2003/0125955) in view of Poirier et al (USPN 6,321,372) and in further view of ("Determining the Probability of Words in a String With a Word-Skipping Model ", IBM Technical Disclosure Bulletin, November 1985).

Claim 5:

Arnold and Poirier disclose the method of claim 3, but they do not disclose wherein the language model is represented as a Hidden Markov Model ([0023]).

The IBM Technical Disclosure Bulletin discloses a speech recognition method where the language model is "defined as a Markov source (a hidden Markov chain)" (page 2, lines 11-13).

Therefore it would have been obvious to one with ordinary skill in the art at the time of the invention to represent the language model as a Hidden Markov Model in Arnold's method because off the shelf Hidden Markov Model software was available therefore freeing Arnold from programming another model.

12.   Claims 8 – 10, 15 – 16, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arnold et al. (USPGPub 2003/0125955) in view of Poirier et al (USPN 6,321,372) and in further view Lanning (USPN 5,787,285).

Claim 8:

Arnold and Poirier disclose the method of claim 7, but they do not explicitly disclose profiling the decoder program to form a profile and determining whether the decoder program is optimized.

Lanning discloses a method of optimizing executable software where the code is profiled and optimized ("automated "profilers" to provide data to these optimizing compilers", col. 1, lines 42-52).

It would have been obvious to one with ordinary skill in the art at the time the invention was made to profile and optimize the code in Arnold and Poirier's method in order to "enhance the run-time performance of a piece of software"(Lanning, col. 1, lines 42-52).

Claim 9:

Arnold, Poirier and Lanning disclose the method of claim 8, Arnold and Poirier do not explicitly disclose wherein responsive to the decoder program not being optimized, automatically modifying and recompiling the decoder program based on the profile.

Lanning discloses automatically modifying and recompiling the code ("The optimizing compiler then uses the information gathered by the profiler to recompile the source code ", col. 1, lines 42-52).

It would have been obvious to one with ordinary skill in the art at the time the invention was made to modify and recompile the code in Arnold and Poirier's method in order to "enhance the run-time performance of a piece of software"(Lanning, col. 1, lines 42-52).

Claim 10:

Arnold and Poirier disclose the method of claim 7, but they do not disclose compiling the code in several parts corresponding to several modules of the pattern recognition system and assembling the compiled code before execution.

Lanning discloses compiling the code in several parts as claimed in the instant claims ("provide executable code optimized for use with a plurality of operational environments or modes ...", col. 2, lines 42-45).

It would have been obvious to one with ordinary skill in the art at the time the invention was made to compile the code in several parts in Arnold and Poirier's method because this "reduces the execution time of the code associated with that environment or mode" (Lanning, col. 3, lines 51-55).

Claims 15 – 16 are similar in scope and content to claims 8 – 9 and are rejected with the same rationale.

Claim 24 is similar in scope and content to claim 8 and is rejected with the same rationale.

Conclusion

13.   Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

14.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Samuel G. Neway whose telephone number is 571-270-1058. The examiner can normally be reached on Monday - Friday 8:30AM - 5:30PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, David R Hudspeth can be reached on 571-272-7843. The fax phone

number for the organization where this application or proceeding is assigned is 571-

273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

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system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SN

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